

CLAIMS

What is claimed is:

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3. The display assembly of Claim 33, wherein said backlight device is an electro-luminescent (EL) light device.

4. The display assembly of Claim 33, wherein said backlight device
10 comprises at least one light emitting diode (LED).

5. The display assembly of Claim 33, wherein said backlight device is a cold cathode fluorescent tube (CCFT) light device.

15 6. The display assembly of Claim 33, further comprising a brightness enhancing film (BEF) located between said backlight device and said low power reflective-type display, wherein a microstructure on a bottom of said BEF directs light toward said plurality of light conducting spacers and reflects light away from at least one portion of said low power reflective-type display without said plurality
20 of spacers.

7. The display assembly of Claim 33, wherein said low power reflective-type display is an electronic ink display.

8. The display assembly of Claim 33, wherein said low power reflective-type display comprises an electronic paper display.

5 9. The display assembly of Claim 33, wherein said low power reflective-type display is a digital paper display utilizing micro-machining technology.

10 14. The display assembly of Claim 34, wherein said backlight device is an electro-luminescent (EL) light device.

15 15. The display assembly of Claim 34, wherein said backlight device comprises at least one light emitting diode (LED).

16 16. The display assembly of Claim 34, wherein said backlight device is a cold cathode fluorescent tube (CCFT) light device.

20 17. The display assembly of Claim 34, further comprising a brightness enhancing film (BEF) located between said backlight device and said low power reflective-type display, wherein a microstructure on a bottom of said BEF directs light toward said plurality of light conducting spacers and directs light away from at least one portion of said low power reflective-type display without said plurality of light conducting spacers.

18. The display assembly of Claim 34, wherein said low power reflective-type display is an electronic ink display.

5 19. The display assembly of Claim 34, wherein said low power reflective-type display comprises an electronic paper display.

20. The display assembly of Claim 34, wherein said low power reflective-type display is a digital paper display utilizing micro-machining
10 technology.

25. The display assembly of Claim 35, wherein said backlight device is an electro-luminescent (EL) light device.

15 26. The display assembly of Claim 35, wherein said backlight device comprises at least one light emitting diode (LED).

27. The display assembly of Claim 35, wherein said backlight device is a cold cathode fluorescent tube (CCFT) light device.

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29. The display assembly of Claim 35, wherein said low power reflective-type display is an electronic ink display.

30. The display assembly of Claim 35, wherein said low power reflective-type display comprises an electronic paper display.

31. The display assembly of Claim 35, wherein said low power reflective-type display is a digital paper display utilizing micro-machining technology.

33. A display assembly for a portable device comprising:
a backlight device;
a low power reflective-type display atop said backlight device;
a transparent sheet atop said low power reflective-type display; and
a light reflecting material disposed between said backlight device and said low power reflective-type display, wherein said light reflecting material reflects said light received from said low power reflective-type display,
wherein said low power reflective-type display comprises a plurality of light conducting spacers that form at least a sub-pixel area, wherein said plurality of light conducting spacers-is located between-said light reflecting material and said transparent sheet, and wherein said transparent sheet outputs light received from said backlight device via said low power reflective-type display.

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34. A display assembly for a portable device comprising:
a backlight device operable to emit light;

a low power reflective-type display atop said backlight device comprising a plurality of light conducting spacers that form at least a subpixel area, wherein said plurality of light conducting spacers transmits said light;

5 a transparent sheet atop said low power reflective-type display, wherein said transparent sheet outputs light received from said low power reflective-type display via said plurality of light conducting spacers located between said backlight device and said transparent sheet; and

a light reflecting film comprising at least one reflective pyramid shaped microstructure, wherein said light reflecting film is atop said transparent sheet,
10 wherein said light reflecting film passes a first portion of said light received from said low power reflective-type display via said transparent sheet, and wherein said light reflecting film reflects a second portion of said light back to said low power reflective-type display to be recycled for subsequently passing through said light reflecting film

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35. A display assembly for a portable device comprising:

a backlight device;

a low power reflective-type display atop said backlight device comprising a plurality of light conducting spacers that form at least a subpixel area, wherein
20 said plurality of light conducting spacers transmits light from said back light device;

a transparent sheet atop said low power reflective-type display, wherein said transparent sheet outputs light received from said low power reflective-type

display via said plurality of light conducting spacers located between said backlight device and said transparent sheet; and

- 5 a brightness enhancing film (BEF) located between said backlight device and said low power reflective-type display, wherein microstructures at a bottom portion of said BEF concentrates light toward said plurality of light conducting ~~spacer~~ spacers and directs light away from portions of said low power reflective-type display without said plurality of light conducting spacers.